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WIRE INSULATOR HOLDER

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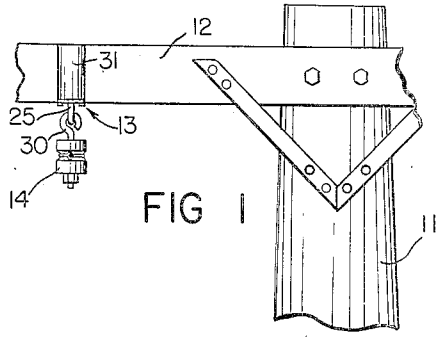


FIG 1

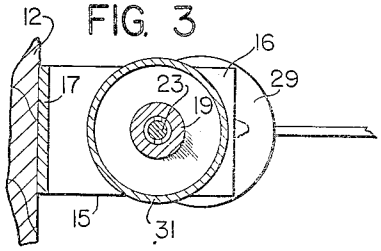


FIG. 3

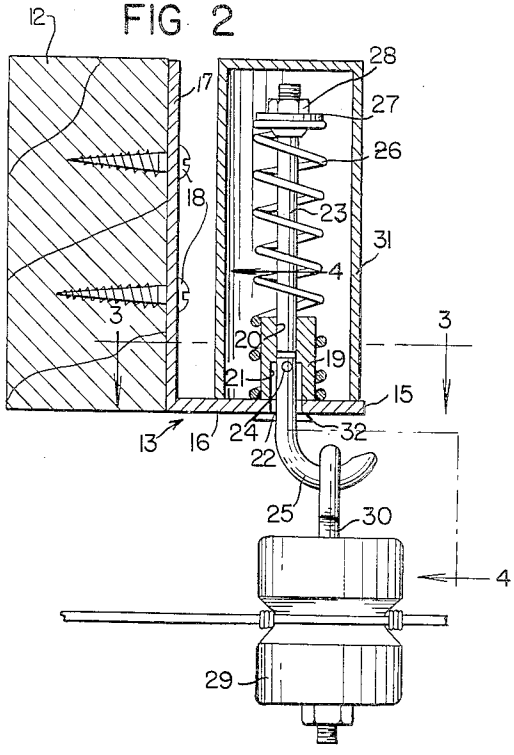


FIG. 2

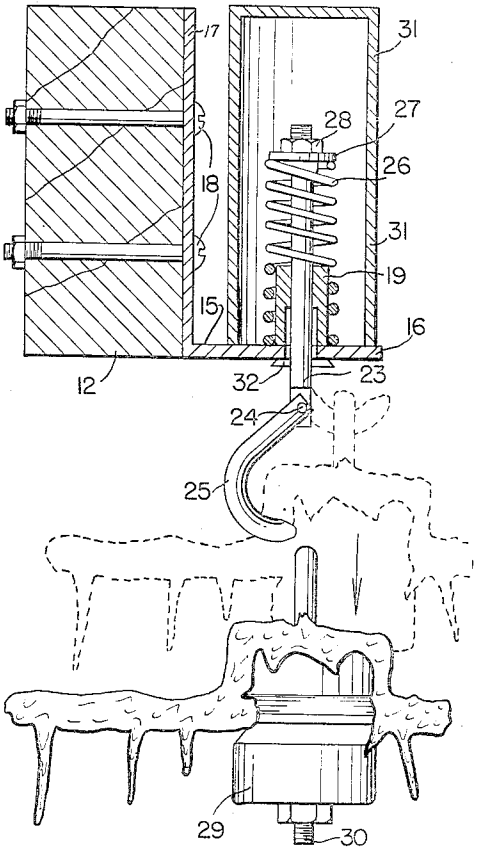


FIG. 5

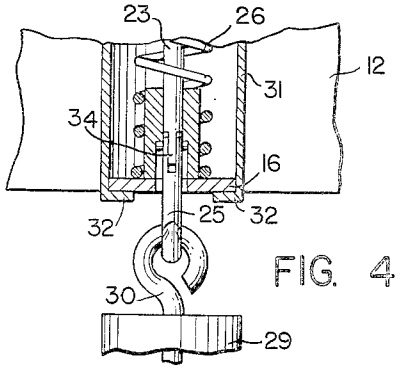


FIG. 4

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WIRE INSULATOR HOLDER

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2 Claims. (Cl. 248—54)

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This invention relates to insulator brackets, and more particularly to insulator brackets for mounting insulators on the cross arms of poles said brackets being of the automatically releasable type whereby the insulators are automatically released from the brackets when an unusually heavy load is applied on the insulators or when an excessive weight of snow or ice accumulates on the wires.

A main object of the invention is to provide a novel and improved insulator bracket for use in supporting insulators on the cross arm or poles, said bracket being very simple in construction, being easy to install, and providing automatic release of the insulator therefrom when an unusually heavy load is applied on the insulator or when an excessive weight of snow or ice accumulates on the wires whereby breakage of the wires, the supporting cross arm or pole is prevented.

A further object of the invention is to provide an improved insulator supporting bracket adapted to automatically release an insulator when an unusually heavy load is applied on the wires or when an excessive weight of snow or ice accumulates on the insulator, said bracket involving relatively few parts, being inexpensive to manufacture, being sturdy in construction, and providing a resilient support for an insulator which will maintain the insulator attached to the bracket until an unusually heavy load is applied on the wires or a predetermined weight of snow or ice accumulates on the insulator or wires, at which time the insulator will be automatically disengaged from the bracket.

Further objects and advantages of the invention will become apparent from the following description and claims, and from the accompanying drawings, wherein:

Figure 1 is a fragmentary side elevational view of the top portion of a pole, showing a cross arm attached thereto, and showing an improved insulator supporting bracket secured to the cross arm and supporting an insulator.

Figure 2 is an enlarged vertical cross sectional view taken through the improved bracket employed in Figure 1.

Figure 3 is a cross sectional view taken on line 3—3 of Figure 2.

Figure 4 is a cross sectional view taken on line 4—4 of Figure 2.

Figure 5 is a cross sectional view similar to Figure 2 but showing the bracket in a position wherein the insulator is released therefrom due to the

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excessive accumulation of snow or ice on the insulator.

Referring to the drawings, and more particularly to Figures 1 to 4, 11 designates a conventional telephone pole to the top end of which is secured a cross arm 12. Designated generally at 13 is an improved bracket for supporting an insulator 14, said bracket being constructed in accordance with the present invention. The bracket 13 comprises an angle bar 15 having a horizontal bottom arm 16 and a vertical arm 17, said vertical arm being secured to the cross bar 12 by screws or bolts 18, 18. Designated at 19 is an upstanding sleeve member secured to the bottom arm 16, said sleeve member being formed with an axial bore 20 having an enlarged lower portion 21 which registers with an aperture 22 formed in the bottom arm 16 of the angle member 15. Designated at 23 is a rod member which is slidably received in the bore 20 and which has pivotally secured at 24 to its lower end a hook member 25. Encircling the stud member 19 is a coiled spring 26 which bears at its lower end on the horizontal arm 16 of angle member 15 and which bears at its upper end on a washer 27 retained against upward displacement by a nut 28 threaded on the top end of rod 23. Designated at 29 is a conventional insulator, and extending axially through said insulator is an eye bolt 30 adapted to be engaged with the hook portion 25. The nut 28 is adjusted so that spring 26 is tensed to a predetermined value, and the force exerted by said spring is such that when hook member 25 is loaded to a normal degree by the insulator 29 the pivot element 24 is supported in the upper portion of the enlarged bore 21, as shown in Figure 2, and rotation of the hook member 25 is substantially prevented. However, when an excessive weight of snow or ice accumulates on the insulator 29 and the wire secured thereto, as shown for example in the lower portion of Figure 5, the increased load on hook member 25 causes rod 23 to be drawn downwardly, against the compressive force of spring 26, to a position wherein the pivot element 24 is located below the horizontal arm 16, as shown in Figure 5, whereby hook member 25 is free to rotate around the pivot element 24, and whereby the weight imposed on said hook member by the insulator 29 is such as to rotate the hook member laterally sufficiently to allow the eye bolt 30 to disengage from said hook member. Therefore, when the loading of snow or ice on the insulator exceeds a predetermined value, the insulator will automatically become disengaged

from the bracket 13. This automatically relieves the cross arm 12 and pole 11 of the excessive load, and thereby avoids breaking or damage to said cross arm or pole.

Designated at 31 is a cylindrical housing which encloses the rod 23 and spring 26, said housing being supported on the horizontal arm 16 of angle member 15, and being formed with diametrically opposed lugs 32, 32 which are bent around the side marginal edges of the arm 16 to underlie the bottom surface of said arm 16, thereby clamping the housing 31 rigidly in housing relation to the rod 23 and spring 26, as shown in Figures 2 and 4.

From Figures 2 and 4 it will be noted that the top end of the hook element 25 is slotted and that the lower end of the rod 23 is formed with a tongue 34 received in the slot, the pivot pin extending through the slot in the top end of the hook element and the interposed tongue 34. Spring 26 normally supports the slotted top end of the hook element in the bore 20, whereby rotation of said hook element is positively prevented. Under excessive loading, the pivot element 24 descends below the plane of arm 16, allowing hook element 25 to rotate freely to a releasing position.

The improved automatically releasing bracket above described may be employed not only for supporting insulators for electric power or telephone lines but may also be employed to support fence wires or the like where it is desired to provide automatic disconnection of the wires from their supporting posts when unusually heavy loads are applied to the wires, thereby preventing breakage of the wires or their supporting posts. For example, the improved bracket may be employed to support fence wires and to provide automatic release of the wires when tree branches, or the like, fall on the wires. Said fence wires may extend across a stream, and the brackets will automatically release the wires when floating brush engages the wires, allowing the brush to float past the fence instead of causing the wires to be broken.

While a specific embodiment of an improved automatically releasing insulator bracket has been disclosed in the foregoing description, it will be understood that various modifications within the spirit of the invention may occur to those skilled in the art. Therefore it is intended that no limitations be placed on the invention except as defined by the scope of the appended claims.

What is claimed is:

1. A wire supporting bracket comprising a horizontal support having an opening, an upstanding sleeve element secured on said support and having an axial bore therein concentric to the spring, a vertical rod member extending slidably through the bore in said sleeve element and through said support, spring means encompassing the element and bearing on the support, an abutment on the rod member engaging the spring, which biases said rod member upwardly with respect to said support, a hook element, said bore being counterbored at its lower end, and pivot means transversely connected to the lower end of the rod member for connecting said hook element to the lower end of said rod member, said spring means being arranged to normally maintain said pivot means within the counterbore in said sleeve element, whereby rotation of said hook element about the pivot means is prevented unless the loading thereon exceeds a predetermined value to withdraw the lower end of the rod from the counterbore.

2. A wire supporting bracket comprising a horizontal support having an opening, an upstanding sleeve element secured on said support and having an axial bore concentric to the opening, a vertical rod member extending slidably through the bore in said sleeve element and through the opening in said support, an abutment transversely carried by the upper end of said rod member, a coil spring encircling said rod member and bearing between said abutment and said support for biasing said rod member upwardly with respect to said support, a hook element having a shank, and pivot means transversely connected to the shank of the hook element and the lower end of the rod member for connecting said hook element to the lower end of said rod member, said coil spring being arranged to normally maintain the shank of the hook element within the lower end of the bore and in alignment with the rod member and maintain said pivot means substantially within the bore in the sleeve element, whereby rotation of said hook element is prevented unless the loading thereon exceeds a predetermined value and means carried by the support for attaching the support to a supporting member.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,193,990	Chase	Aug. 8, 1916
2,237,597	Fisher	Apr. 8, 1941

FOREIGN PATENTS

Number	Country	Date
2,104	Great Britain	of 1906
251,016	Switzerland	July 16, 1948